



Episode 394: The Carnivore Code, Plant Toxins and
Optimal Protein With Dr. Paul Saladino

Child: Welcome to my Mommy's podcast.

Today's podcast is brought to you by Beekeeper's Naturals, a company on a mission to reinvent your medicine cabinet with clean remedies that actually work. At Beekeeper's, they believe that you and your family deserve to feel your best all day, every day, which is why they create these clean science-backed natural remedies that support your daily health using bee products, which I have been a big fan of for a lot of my life as a beekeeper and now watching my oldest son be a beekeeper as well. I wanna talk specifically about a couple of my favorite things from Beekeeper's. The first being their B.Soothed Cough Syrup. It's a remedy, one of those I hope none of us ever need but I'm always really glad to have on hand when we do. It's a super clean cough syrup that helps you bounce back quickly without any of the junk. So unlike the remedies that were available when I was a kid that tasted kind of chemically and a little bit like cherries and pine sol maybe had a baby, the B.Soothed Cough Syrup is delicious. It has a very mild berry flavor along with things like pure buckwheat honey, elderberry, Chaga mushroom, which is known as the king of mushroom, Bee Propolis, and olive leaf extract. Back to Bee Propolis in a minute because that's my other favorite product from them. But B.Soothed is delicious and really helpful this time of year. Like I said, I hope that you never have an occasion to need it but I always keep it on hand in case we do. It is free of drugs, and dyes, dirty chemicals, and refined sugar. So I always have it in our medicine cabinet for our first sign of needing it. But it's not the only Beekeeper's product that I love. I mentioned before, I am obsessed with their Propolis Spray and Kids Propolis Spray because they are also part of my first line of defense against any tickle or sniffle.

Propolis is so cool. It's a substance that the bees use to keep the hive safe and free of bacteria. And it just has so many incredible antibacterial properties naturally. It's a daily defender. I use it often for immune health and like I said, at the first sign of scratchy throat or even if my throat is just irritated from for instance voice lesson, if I sing a whole lot in a particular day, but it's a natural immune support. I love to use four sprays in the morning or anytime my throat's feeling tired or scratchy. Propolis is made out of plants and tree resins, and it's not honey. Bees use it, like I said, to defend their hive from germs. It's basically the hive's immune system, And now we get to benefit from it as well. Their Propolis Throat Spray is sustainably sourced and only has three simple ingredients. No refined sugars, dyes, or hard to pronounce chemicals. Those two are always around and I am a big fan of all of their products. If you're ready to upgrade your medicine cabinet, you can check all of their products at their website. Their Cough Syrup and Propolis do sell out quickly. And I have a feeling that's gonna be even more the case this year. So check it out quickly. Go to beekeepersnaturals.com/wellnessmama and you can save 15% on your first order there. Get ready to meet your new medicine cabinet with Beekeeper's Naturals.

This podcast is sponsored by Four Sigmatic. They are one of my favorite companies. I've been talking about them for years and they are well-known for their incredible and delicious mushroom drinks and products of all kinds. I have personally been starting my day with their coffee with Lion's Mane in some form for years. I really like their ground mushroom coffee with Lion's Mane because it works just like any other coffee, whether in a coffee maker or I use Chemex or a Ratio. And it has an added benefit. So, obviously coffee is one of the most consumed beverages in the world. Theirs is unique because it adds Lion's Mane. So you still get to keep the benefits of coffee but the addition of Lion's Mane really supports productivity and focus in a really unique way,

and I find really helps cut the jitters. Lion's Mane is one of my favorite mushrooms, and I love that their coffee contains it. They have both the ground coffee and instant packets, which are great for on the go and then I always keep in my purse, especially when I'm traveling. Their coffee with Lion's Mane also includes a mushroom called Chaga. And you might have heard me talk about this on my interview with Tero, who's the founder of Four Sigmatic on this podcast. But Chaga is known as the King of Mushrooms. And it's one of my favorites because it is a really functional mushroom full of antioxidants and beneficial compounds that support the body in various ways, including by supporting the immune system. They have many other products as well, including single Elixir blends of mushrooms like Cordyceps, Chaga, Reishi, and Lion's Mane, as well as several other coffee products, including one with Lion's Mane, one with Cordyceps. I really loved all of their products that I've tried and my kids love their Reishi Cacao at night, and I love that it helps them sleep. A common question I get, does this coffee taste like mushrooms? Or people say, "I don't like mushrooms. Will I like this coffee?" And I can tell you their coffee, especially the Lion's Mane coffee tastes exactly like regular coffee, does not at all taste like mushrooms. You just get the benefits of the mushrooms without the taste. I have found that mushroom coffee is also very gentle on the gut. So it doesn't leave the jitters or that crash like some coffees do and the Lion's Mane seems to really enhance the natural effect of the caffeine. All Four Sigmatic products are organic, vegan, and gluten-free. And every batch is tested by a third-party lab to ensure that they don't contain any heavy metals, allergens, negative bacteria, yeast, mold, mycotoxins, pesticides, etc. So you're getting the highest quality product available. They are all backed by their 100% money-back guarantee. So you can try these with complete peace of mind. I love this company so much that I've worked at an exclusive offer just for "Wellness Mama Podcast" listeners. You can receive 10% off of your whole order on any Four Sigmatic products including their mushroom coffee or their Reishi, which is part of my nighttime routine. Check them all out at foursigmatic.com/wellnessmama and use the code `wellnessmama`, all one word, at checkout to save 10%.

Katie: Hello, welcome to "The Wellness Mama Podcast". I'm Katie from wellnessmama.com and wellnesse.com, my new line of personal care products, including good for your hair and scalp hair care, toothpaste, and hand sanitizer. And I would highly encourage you to check them out if you haven't. That's wellnesse.com.

This podcast is a much requested guest. I'm here with Dr. Paul Saladino, who is the leading authority on the science and application of the carnivore diet, which is increasing in popularity right now. And we go deep on this today, especially the implications for women and how it needs to be modified if women want to take on this approach to help with things, like, he's used to reverse autoimmune issues, chronic inflammation, mental health issues, all kinds of problems with hundreds of patients, and for himself. And he's worked with many people who have been told their conditions were untreatable, and managed to help them reverse those conditions anyway. He's the founder of Heart and Soil, which is a company that seeks to help people reclaim their ancestral birthright to radical health, through eating nose to tail, and he's the host of the "Fundamental Health Podcast", as well as author of the bestselling book, "The Carnivore Code". He is double board certified and he definitely practices what he preaches, he comes highly recommended, and I loved this information-packed interview. I know that you will too. And without further ado, let's join Paul. Dr. Saladino, welcome to the podcast.

Dr. Paul: Thanks for having me on, Katie.

Katie: I have followed your work for a while now. And I was so excited to finally get to chat with you and share you with the listeners today because I think you are one of the top experts in the world on an increasingly-popular topic right now, and a little bit controversial of one. And I have so many questions both personally and ones that I've gotten from listeners that I can't wait to jump into. But to start off broad, for anybody who's not familiar, you are the author of "The Carnivore Code." I'd love to hear a little bit about your story and how you, through your research and your own personal experimentation, arrived at this kind of methodology.

Dr. Paul: Yeah. So, I've been thinking about diet for a long time and had many iterations. I grew up in a medical family. My father was an internist and my mother was a nurse practitioner. I had my own medical issues growing up, eczema and asthma, which at times were pretty severe. After college, once I started realizing a little bit more about nutrition and went back to PA school and cardiology. So, I'm a physician, but I was a physician assistant in cardiology before I went to medical school. But around the time I was going back to PA school after taking some time off after college, I started thinking about how food affected me. I think like most of us in my early 20s, I didn't think about how food affected me. I just ate what was good and ate what I wanted when I wanted to.

But at some point, I had this mental shift. And I began to think, "Okay, the foods that I eat affect how I feel, how I perform athletically, and maybe they're affecting my eczema and my asthma," which at times can really be a bummer for me in terms of quality of life. And the first thing I actually did was a vegan diet because I didn't have a lot of nutrition training. There's essentially zero nutrition training in physician assistant school or medical school for doctors. And I kind of got pulled into this ideology thinking, "Oh yeah, maybe meat isn't good for humans. And maybe cooking food is not good for humans. So, I'm going to eat a raw vegan diet." And though I was well-intentioned, I believe now that I was way off base, but that's how we learn. I lost 25 pounds of muscle mass, lean muscle mass, which is not a good thing.

I had really bad GI symptoms. I had horrible gas, and I generally didn't feel too good for about six or seven months, but I persisted and then eventually realized, "Wait a minute. This doesn't make a whole lot of sense. When I think about the moderate amounts of anthropology or evolutionary biology I knew at the time, I could even then realize humans have been eating meat for a long time. This is written into our book of life. I'm going to reincorporate this in my diet and see how I do." So, I reincorporated meat, felt better-gained weight immediately in terms of muscle mass. And it was lean weight, not... I didn't get how adipose tissue. I didn't get fat. I felt better, but my eczema continued. And so, I continued iterating around kind of paleo-type diets for the following 10 to 12 years. I worked as a physician assistant in cardiology for four of those. I went back to medical school for four of those.

And I had four of those in residency at the University of Washington in Seattle. And at some point during those ensuing years, I thought, "You know what? I've been trying to eat this paleolithic diet with entirely organic food. And my eczema is not going away. There is still something in this food that is triggering my immune system. And I don't want my immune system to be smoldering beneath the surface," even though for me, it was mostly a skin rash. The further I got into medicine, the more I realized if my immune cells if the innate and

the adaptive immune system are reacting to things in my skin or in my airways, my whole body is a little bit inflamed. I don't want that. I want to feel fully in line with my environment. And so, I had to kind of do some soul searching and think, "What is it in my diet that is not agreeing with me. I've already tried eliminating meat that didn't fix it. Is it possibly the plants? That's crazy."

Because everything I'd been told or everything we were told sort of in the mainstream and even the "non-mainstream" functional medicine community says, "Oh, plants are amazing for you. Polyphenols are beneficial. Fiber is good. More plants, more plants, more plants. Eat the rainbow." And what I was starting to realize was maybe that's just not the case. And that was the beginning of a pretty major rabbit hole about two years ago, in which I stopped eating pretty much all plant foods and began to experience significant improvements in eczema and asthma to the point that eczema, which was previously like all over my back, my low back, my wrists, my shoulders, my elbows, completely went away within a few weeks never to return. And then I had other benefits, which were sort of psychological, unexpected improvement in mood, improvement in emotional stability, and, overall, a more positive outlook on life.

And I thought, "Well, this is really interesting. Let me go down this rabbit hole." And I'm sure at this point, your listeners are even starting to ask all of the same questions that I did. Well, what about fiber? And what about phytonutrients? And those were all of the kind of questions I had to answer for myself and really dig into the literature and all of the things I put into the book, "The Carnivore Code," but the high level is that when I dug into the medical literature, I just kept finding surprising things that, at an anthropologic level, our ancestors eat plants differently than we imagine they did, or than we believe we should be eating plants today. They don't really eat leaves and stems and nuts and seeds that much. And when they do, they detoxify them greatly. They use those foods as fallback foods rather than the majority of their diet. And they seek animals and eat them nose to tail preferentially pretty much across the board.

I thought, "Well, that's kind of cool." And then if you go down any one of those rabbit holes, whether it's the fiber rabbit hole, or the meeting cancer rabbit hole, or the cholesterol rabbit hole, you just find that the research is a lot less convinced or a lot less convincing than we're told in the mainstream media. And that brings up a whole different topic about how we are fed nutrition information by the mainstream media, but it is in no way, shape, or form representative of the entirety of the medical sort of the body of medical knowledge that's out there. And it just feels kind of like a treasure hunt. You know, like, well, I kind of like get to be Indiana Jones a little bit, go into medical literature and say, "Wait a minute. Look at this gem of a study that was done in 1960 or 1970 or 1995 or 2005 that no one talks about."

And that's what's so hard, I think is for most people, they're not physicians. They're not going to be able to do this research and sort out which studies to listen to or not. But that's one of the things that feels quite meaningful to me is to be able to really demystify a lot of that research and help people understand. There's a lot of research out there to support the notion that meat and organs are the centerpiece of a human diet if we want to thrive. That's not to say that everyone needs to stop eating all plants, but that if we really want to attain optimal health, I think we should think about what's written into our book of life, our genetics, four million years of human evolution and realize there is a spectrum of plant toxicity. And if we're not thriving,

many of us would feel a lot better if we eliminated the most toxic plants while focusing on the foods that our ancestors have always prioritized, which is animal meat and organs.

Katie: Yeah. And I love that you brought up the inflammation and the chronic disease key because I think there's a lot of theories on this right now. It's definitely no secret that chronic diseases are relatively on the rise across the board. And certainly, like I've heard animal products get the blame for that quite a bit, despite the fact that when I looked at the data, we're actually eating much less of those things now than we did certainly a hundred years ago or even a few decades ago. So, I'd be really curious to hear what your theory is as to why we're seeing this relatively drastic rise in such a short amount of time. And really this is part of my own journey as well, reading that when my first son was born, I read that for the first time in 200 years, his generation would be the first to have a shorter life expectancy than their parents. So, this is a very recent and very tangible shift. I'm curious what you think some of those factors are.

Dr. Paul: This is a fantastic question. So, there's a couple of videos I've done on the heartandsoil.co website that will walk people through this. And there's a couple of blog posts that I've done that really elaborate on this pretty clearly, but you're absolutely right. That if you look at chronic disease in the Western world, let's just focus in the United States, North America, it's absolutely skyrocketing. Whether you're looking at obesity, diabetes, or overall chronic disease, it's gone through the roof in the last 100-ish years. Most of the studies, a lot of the data only looks at the last 50 years, but the trend is exactly the same. So, something is going wrong, and you're totally right. It gets blamed on red meat, but there is an inverse correlation there, which is the complete irony. And it just makes you do the facepalm that anyone would even begin to suggest that as a hypothesis.

And what I mean by that is that we are eating less red meat in 2020 than we did 50 years ago. And there's some great graphics. I know this isn't a visual podcast, but if you look at graphics, which I've shared in the past in my social media and stuff, you can look at the amount of calories that humans have been eating from things, from all sorts of different food groups over the last 50-ish years, depending on which set of data you're looking at, and they're quite revealing. So, the first thing to realize is that in addition to the things that I mentioned about the chronic disease skyrocketing, it's also really critical to note that we are smoking less, drinking less, exercising more, and more people are "adhering to healthier lifestyles." So, if that's the case, then where is all this coming from?

The last piece of that equation is also that we are, in addition to that, that we're eating less saturated fat, we're eating less cholesterol, and we are eating more plants. And all these graphics are out there. None of this is controversial, but if you look at the one graphic, if you look in 1960 relative to 2018, if you look, for instance, at the amount of grains we are eating. So, in 1960, we consumed at 627 calories per day in grains. And then there was a data point taken in 1997 and we were up to 871. So at that point, you might say, "Okay, we're eating too many grains. That's why chronic disease is skyrocketing." But between 1997 and 2018, the calories from grains went down to 812. So, we actually declined, but rates of chronic disease are continuing to rise massively. Sugar and sweeteners, kind of the same story.

In 1960, we were eating 515 calories per day of sugar and sweeteners. In 1997, it went up to 651, but then between 1997 and 2018, it went down to 603. So, both grains...So, sources of carbohydrates of both grains and sugar and sweeteners went up, and then they've come down. But the rates of chronic disease continue to rise. There's another line on this graph, which is meat consumption, and meat consumption has risen sort of a little bit since 1960. I think it looks like we were eating around 300 calories per day from meat in 1960, and we were eating 423 calories in 1997, and in 2018, we were eating 460 calories from meat per day. But if you break that meat down, we're eating more chicken and less red meat. And really no one is pointing a finger at chicken. And if you look at the epidemiology studies, which are inevitably flawed, we're eating significantly more poultry and way less red meat.

So, if we want to even make a hypothesis, this is all correlational data. If we want to make a causative hypothesis, we could not hypothesize that red meat is driving the problem here. We're eating less pork, less beef, less goat and lamb, less of everything except chicken. The only hypothesis that would make any sense is that chicken is driving chronic disease. I don't think many people think chicken is driving chronic disease, but it's possible. And the other possibility, if you look at this graph of the trends in daily calories from major food groups, is there's a big red line moving across this graph. And it goes from 276 calories in 1960 to 544 calories in 1997, up to 699 calories in 2018. And what is that graph? That graph is vegetable oils. And so, if you just look at the correlational data, you can make a really strong hypothesis, which you would then need to test with an interventional study that vegetable oils could be driving chronic disease because as we've talked about, we're not exercising less. That's not true.

We're not smoking more. We're not drinking more. We're not eating more saturated fat. We're not eating more cholesterol. The only things that are happening really is we're eating more plants, we're eating more chicken, and we're eating way more vegetable oil. So, it starts to look really interesting. And so, my perspective is that the major driver of chronic disease in the United States and North America and across the world is this increased consumption of vegetable oils coming mainly from seed oils. Now, vegetable oils are, it's kind of a misnomer. It's not really a vegetable. It's a seed, a seed oil. And the carnivore community started out, or a lot of people in the carnivore community, get really tied up in carbohydrates. And I definitely do not think that high-fructose corn syrup is a good thing for humans, mainly because it's just bereft of nutrients, but most people or many people in the carnivore community I feel are sadly a little bit too dogmatic about this.

And they just want to believe that it's carbohydrates, carbohydrates that are causing problems. Now, I think for a lot of people who have preexisting metabolic dysfunction, diabetes, insulin resistance, removing carbohydrates can result in improvement. But I don't think that they cause the problem in the first place. I think that it's this underlying excess evolutionary inconsistency of vegetable oils, these polyunsaturated fats that really sets the table for a problem, that really sets us up for metabolic dysfunction. And that once our sort of handling of nutrients that is insulin and etc, adipocytes communication with the periphery, creating a state of metabolic dysfunction and insulin resistance, once that becomes disordered, we don't handle carbohydrates very well. So, the removal of carbohydrates can make it look like carbohydrates might be causing the problem. And I think it can be very beneficial for some people who are already in that state of metabolic dysfunction, but I don't think it caused the problem.

There are lots of examples of cultures around the world who eat massive amounts of carbohydrates, but don't have chronic disease and don't have diabetes specifically or other chronic diseases. You can look at people like the Tukasinta or the Kitavans or numerous indigenous cultures who eat a moderate to a large amount of their diet is carbohydrates, but they don't get diabetes. They don't get chronic disease. They don't get cancer eating sweet potatoes and white rice. And you can even look at the people in Japan. In 1963, a large proportion of the amount of calories in the Japanese diet was from white rice, something that a lot of people would consider to be nutrient-poor, which I would agree with, but not really totally that process when you just strip the hull off the rice. But the rates of diabetes were extremely low. And the amount of carbohydrates eaten in the Japanese population has declined since 1963, but their rate of diabetes has gone through the roof.

So, how do we do the Indiana Jones game here? How do we really try and play the detective? Maybe this is more of a Sherlock Holmes than Indiana Jones game. And what you see in Japan, what you see across the world is the introduction of seed oils, the introduction of these polyunsaturated oils. So, I completely agree with you. We've absolutely gone downhill. And I think it's because we've done something that is totally evolutionarily inconsistent by consuming excess amounts of these seed oils, which is signaling to our body in ways that we don't want it to be.

Katie: Yeah, I fully agree about that. And that's something I've talked about on my blog as well, that we truly not only have no biological need for those types of oils. There's always a better option, especially when it comes to fat sources. And these are, like you mentioned, so new as an introduction into our diet and we're consuming them in really, really big amounts. And I love that you also brought up as carbs not being the problem, because that's definitely a controversial thing right now, especially as keto has become more and more popular. And I see a lot of women who are very much afraid of carbs in any form or any capacity. So, I'd love to go a little bit deeper on understanding that because certainly, carbs can come from a variety of sources, and even you would, I'm sure, be able to explain this much better than I could, but when consuming a certain amount of protein at a certain point, there is an effect, a glucose effect with even with protein. Is that correct?

Dr. Paul: That's correct. That's the process of gluconeogenesis. When we think about fear of carbs, you're absolutely right. It's a little bit ironic because your liver makes carbohydrates. We make glucose in the human body. We don't make linoleic acid, but we make glucose. And if you don't eat glucose, your body will make it. So, I don't understand why people are so fearful of carbohydrates. I fear that we are conflating clinical improvements with the removal of carbohydrates with the notion that carbohydrates caused the problem in the first place. And that gets to be a little bit nuanced for people, but it's what I was hinting at earlier, that in the setting of underlying metabolic dysfunction, removal of carbohydrates can be helpful for humans because our handling of carbohydrates becomes "broken" when we are insulin-resistant. And I don't love the terminology insulin resistance. I prefer metabolic dysfunction.

So, when we are metabolically dysfunctional, and I'm happy to discuss what that means, we don't handle carbohydrates very well. So, I think that the reason that a ketogenic diet and the ketogenic movement gained steam is that it does help people, but it's not the ultimate answer. And I think that's why it fails long-term in a lot of people or leads them to kind of dead ends or roadblocks. And that can be very frustrating because a lot

of people that I've worked with, a lot of people that I've seen will lose weight, they'll start to feel better, and they'll plateau, or they won't be able to move past it, or other problems will crop up, but they know they have lost weight or improved with carbohydrates. And they're very fearful of incorporating them back thinking that, "Well, I'm just going to regress." And oftentimes, they don't, but there's a lot of fear built in under that.

And so, the problems I see with ketogenic diet long-term are yes, higher levels of fasting glucose because eventually your body just does a lot of gluconeogenesis. You become physiologically insulin-resistant. Then, your body needs to have a lot of glucose around because your muscle is refusing it. I've looked at continuous glucose monitors from people doing long-term, low-carb, zero-carbohydrate diets and seen fasting glucose in the 120s and all day, the baseline is above 110 or 115. And that's just not something that I think is a good thing. Fasting glucose should be 70 to 90 milligrams per deciliter, but people who are low carb long-term, especially those who are very low carb, really end up with higher fasting glucose levels. And we see this. There are well-known people in the carnivore community who have shared their blood work and have hemoglobin A1C values of 6.2, which is equivalent to a fasting blood sugar of 126.

And it's just thinks, okay, that's, that's, long-term keto. Your body's adapting to survive, but is that ideal? I don't think carbohydrates cause metabolic dysfunction. Like I suggested there are plenty of examples, Japanese, indigenous cultures that eat a lot of carbohydrates, and they don't get diabetes and they don't also get fat. So, carbs don't cause the problem but the removal of carbohydrates when you're sick can be beneficial in the short term. That's a nuanced concept for people. So, I think ketogenic diets are really helpful if you have diabetes. If you have pre-diabetes, it's probably necessary for some amount of time, but if you really want to fix "the underlying issue," it's not the carbohydrates. It's the seed oils, which are breaking the underlying biochemistry. And sometimes people on ketogenic diets end up eating moderate amounts of linoleic acid and other oils because they'll reach for things like nut butters or, you know.

I mean, you could technically do a ketogenic diet with canola oil. Not many people do, but you could do a ketogenic diet with higher polyunsaturated oils or full of nuts and nut butters, and all things have linolenic acid. And that might just slow the progression or the return to normal physiology in a human body. So, I think if you don't pair the removal of carbohydrates with some attention to the amount of polyunsaturated oils in your diet, it won't get better. And then people end up in dead ends and they don't know what to do. They end up with side effects. They end up with palpitations. They end up with muscle cramps that are debilitating. They end up with sleep problems, and those things are generally ignored by the ketogenic community. And I don't like that. I think that they need to really own up to the fact that long-term ketogenic diets are doable for humans. They're probably most beneficial in kids that have recalcitrance seizure disorders or for maybe seals who are in high oxygen environments and need to protect their brain. But for most of us, I think cyclical ketosis is fine from time to time with intermittent fasting or longer duration fasting or intermittent periods of low carb. But the inclusion of carbohydrates in the human diet from time to time, I think, is beneficial for us. And it didn't cause the problem in the first place.

Katie: That makes sense. Okay. So, to circle back to something you mentioned at the beginning of that answer, you said you could explain what metabolically dysfunctional means. And I think this is a really timely point right now, and one that I'd love to go a little deeper on, especially considering where we're finding there are

kind of metabolic correlations with viruses and other things that are going on right now. So, how do you define metabolically dysfunctional? And for someone who maybe meets that criteria, what are some of the steps we can take to start reversing that damage?

Dr. Paul: Metabolic dysfunction, as I mentioned earlier, has become synonymous with insulin resistance, though the latter term is less specific. Basically, what's happening when you're metabolically broken or metabolically dysfunctional, a/k/a insulin-resistance, is that your body is pathologically refusing to listen to the signals from insulin. Now, there are times in our lives when our body appropriately refuses to listen to the signals of insulin. This is what happens when you fast overnight. If we didn't have physiologic insulin resistance, we would die. We need our body to stop listening to the signals of insulin from time to time so that our blood sugar can be maintained normal. When you are in ketosis, your muscles are insulin-resistant. So, we need to be a little bit more precise with our terminology. But metabolic dysfunction is like pathologic insulin resistance. Your muscles, your liver, the majority of the body is refusing to listen to the signals of insulin when they should be.

And that is probably happening because of the fat cells. I think that if you think about your metabolism, which really runs your body in so many ways, it's a central key feature of human biochemistry. And the fat cells, the adipocytes are central to that. So, the rest of the body isn't just becoming irascible or calcitrant and refusing to listen to insulin. It's receiving signals from the fat cells to do it. And those fat cells are there for an evolutionary reason. In this case, the fat cells are signaling to the rest of the body to become insulin-resistant when they really shouldn't be. And I think it all begins again with linoleic acid and the fact that if your fat cells become sick because you are packing too much linoleic acid in them, they start sending out the wrong signals to the rest of your body. And then everything kind of snowballs downhill in a real negative way.

Whenever I talk about this, people always say, "How do I know if I'm metabolically healthy? How do I know if I have insulin resistance? How do I know if I have metabolic dysfunction?" And there are a couple of different ways you can look at this. Traditionally, we've used metrics like an oral glucose tolerance test, which is where someone gets their blood glucose and potentially insulin levels checked at intervals after drinking 75 grams of pure sugar or glucose. You don't have to do something quite that extreme. You can just wear a continuous glucose monitor and eat some carbohydrates, and you can look to see what your postprandial glucose response looks like, what the area under the curve of your postprandial glucose response looks like, how high your blood glucose goes after you eat, and how long it stays elevated, and how long it returns to normal.

That's probably the best way to tell how metabolically healthy you are. Many people can just look at their body and say, "I am 30 pounds overweight." And for that person, there's a possibility that you do have some underlying metabolic dysfunction. Not always. Some people are able to have fat cells that avoid becoming sort of inflamed and too large by dividing, the fat cells divide. They do what's called hyperplasia versus hypertrophy of the fat cells. If adipogenesis is not impaired at the level of the fat cell, then you can be overweight but not metabolically broken. You're still overweight, which isn't a good thing. But for most people, if you're overweight, something is wrong. And you're at least on your way to becoming metabolically unwell. The tricky part is that some people even are not that overweight and they can be metabolically dysfunctional.

And again, it's very individual. It has to do with our nationality, our ethnicity. Some cultures tend to develop insulin resistance or at least pathologic insulin resistance at much more apparent leanness. Asians have a propensity to become pretty metabolically dysfunctional without looking massively obese. And so, for a lot of people, correlating blood sugars with blood work is helpful. And the one or two blood tests that really should be done on everyone in the clinic that are almost never done are things like fasting insulin, fasting C-peptide levels. Hemoglobin A1C is done sometimes, but a lot of times, if your fasting glucose isn't elevated, your doctor's not going to do a hemoglobin A1C. And they're almost certainly never going to do a fasting insulin, but these are all really important metrics that you can look at to see how the metabolism is going. And you can kind of pair those. You can triangulate those with things like HS CRP, high sensitivity CRP, other metrics that really give us a sense of overall metabolic health are just missed so often. And that's, I think, we miss people in the precursor stages of this problem.

Katie: That makes sense. Okay. You've also mentioned plants potentially being some of the problem earlier in this interview. And I'd love to go deeper on this as well because certainly, there has been increasing number of people saying that...like more of a move towards veganism and people saying that we should only eat plants. And then there are people like Dr. Gundry who have been on this podcast before saying there are, in fact, problems with many plants. I'd love to hear your take on this and go a little bit deeper on some things to be aware of when it comes to consuming plants, especially only plants or large amounts of these plants.

Dr. Paul: Like we talked about earlier, it starts with anthropology and remembering where we've come from. If we look at a hunter-gatherer tribes, we can see the way that they consume plants. Consistently if animals are available, they will prioritize animal foods over plant foods. So, I think that there is really no evolutionary precedent for prioritizing plants over animals. I think humans are designed to eat animals as the central part of their diet and to use plant foods as "fallback foods" during times of scarcity. But even when we're eating plants historically, and today, if we're aware of this, we need to think that plants are really not our friends. They're beautiful. They're a life form that we share this Earth with, but they're just not interested in getting eaten. And animals are not interested in getting eaten either, but they can run away from you, and they can kick you, and they can bite you. And they can gore you.

A plant is rooted in the ground. It has only defenses based on spines or spikes or microscopic chemicals that are the plants' warfare. And this is often forgotten. And, in fact, we've gone so far off the path that many of us believe that these defense chemicals are somehow good for us because we've misinterpreted the research. But if you think about it from the perspective of a plant, a plant is rooted in the ground. It doesn't want to get eaten. It's going to do everything it can evolutionarily, and, in fact, it should. If it wants to pass on its DNA to the next generation, it's going to do everything it can evolutionarily to protect its stems, leaves, roots, and seeds, especially the seeds, and especially the stems and leaves too. We think about seeds differently than we think about nuts and grains and legumes, but they're all seeds.

And so, I think that Steven Gundry has done a good job of raising awareness for lectins, which are carbohydrate-binding proteins found in things like grains and legumes, but they're also found in seeds and

nuts. Those are all plant seeds. And I think that he's started to raise our awareness of the fact that there are problems with plants, but he stopped a little bit too short. So, yes, I think that many people are sensitive to lectins in plant seeds, plant legumes, plant nuts, plant grains. They're all seeds of plants. They all grow into plants if we plant them, but there are many other problems with these foods as well. They can have digestive enzyme inhibitors. They can have frankly toxic compounds that bind minerals and our bodies, oxalates, phytic acids, saponins. Many things are in seeds to prevent us from eating them.

If we move on to the leaves, I mean, a plant doesn't want its leaves to get any either. There are lots of defense chemicals in plant leaves. In the skin of grapes and peanuts, there's a compound produced when they're attacked by a fungus called the vitritis fungus. And that compound is something we've come to know as resveratrol. And we imagine it to be beneficial, but it's a plant defense molecule. It's not made for humans. It's made for plants to prevent this fungus from eating the skin of these fruits or in the case of peanuts, a legume. And if you look at the research with resveratrol, though we've been told in the mainstream press it's beneficial for us, it has repeatedly failed in human trials to show any efficacy. And in fact, in a lot of human trials, it doesn't look so good at all.

It looks like it worsens outcomes, but we're never told about that. So again, this is the idea that there's a lot of research that is not fully discussed in the mainstream media regarding so many of these issues. And the story is the same over and over and over, whether we're talking about curcumin or resveratrol or quercetin or isoflavonoids, or, you know, isothiocyanate, or any of these compounds from plants. We've imagined that they're somehow good for us by looking at the research in a biased way. But the alternative hypothesis is equally entertainable. The alternative hypothesis is equally valid and should not be ignored. And it's that these are all plant defense molecules. And if we can't clearly prove they are doing something for us that we can't achieve without them, they do have side effects. They do have negative side effects in humans.

And I think that we've gone the wrong side of this equation by including them in mass amounts in our diet. Sulforaphane is a compound we think of as an isothiocyanate. This is the one from broccoli sprouts, and people often think, "Oh, this is so good for me because Rhonda Patrick told me," but sulforaphane is a plant defense chemical. It doesn't exist in brassica plants, kale, collard, broccoli sprouts, etc. until that seed or sprout or leaf is eaten by an animal. And parts of the cell wall are broken down. An enzyme called myrosinase combines with glucoraphanin and comes the defense molecule. That's a pretty clear pattern. That's a booby trap. It's like you step in something, it closes on your leg. Now, there's no sulforaphane in broccoli sprouts until they're eaten by an animal trying to consume them.

So, why have we been told it's good for us? Well, you can look at sulforaphane and see that it increases levels of antioxidants, endogenous antioxidants in the human body, but it does that by being a pro-oxidant. Sulforaphane is not an antioxidant, and anyone who tells you that doesn't understand general chemistry. Sulforaphane is a pro-oxidant. It triggers our endogenous antioxidant system, but the tricky part is that it also does other negative things in the human body. It disturbs the incorporation of iodine into the thyroid for thyroid hormones. And so there you're faced with a dilemma. It does something that appears good, but it also does bad things. Well, if all things were equal, we could look at that and say, "Let's weigh the risks for some benefits," but they're not equal because the benefits of sulforaphane are redundant. There are benefits that

we can achieve without that molecule completely. We can do things that I would consider to be environmental hermeneutics, sunlight, exercise, cold, heat, exposure, fasting.

These are environmental hermeneutics. They don't have a side effect. Sulforaphane has a side effect. And yet all of these things do the same thing. They trigger the NRF two-system in cells, and they increase the amount of endogenous antioxidants in the human body. So, I think we've been bamboozled with so many of these plant molecules, we've been told they're good for us so that somehow they have indispensable roles, but they just don't. They're redundant benefits for negative harm. And I think it's just a very badly misinterpreted perspective. If we must eat plants for survival, or we choose to eat them for color, variety, texture, or flavor, we can do that. But the question is not whether plants are toxic. The question is how well each of us detoxifies them. And so, in the carnivore code and the stuff I've been talking about recently, I've been encouraging people to think about plant toxicity spectrum.

Earlier, I discussed plant stems, plant leaves, plant seeds as problematic, some plant roots, but there is a part of the plant that a lot of plants actually want us to eat and that is the fruit. And so, if we're going to eat plants, I think the fruit of plants is less toxic. Now, that flies in the face of a lot of mainstream thinking today also and certainly gets everybody in the keto world worried. You're going to fruit? That's horrible. That's fructose. But our ancestors have been doing that for millions of years, and there are tons and tons of indigenous cultures that eat a moderate to a large amount of fruit in their diet and do just fine. So, we just run up against all of this dogma and we have to be really careful that we didn't get stuck in this, that we're able to kind of move outside of it and think for ourselves.

But if we want to eat plants, I think that there are parts of plants that are less toxic, and we'll get to this. I know we talked before the podcast about thinking a little bit about men versus women, but regardless of it's men or women or whoever, I think there are sources of carbohydrates that we can include in our diet that are less toxic. I don't think grains are necessarily one of them. Some people might do okay with white rice because it's detoxified. It kind of like has the hull stripped off, but some people do okay with sweet potatoes. Some people do okay with fruit like Kubota squash. Like, a winter squash is actually a fruit, and some people will do fine with just regular summer fruit like cantaloupe or watermelon or berries. These are all ancestrally-consistent foods and very different foods when we select them intentionally versus things like leaves.

Why are we eating tons of kale? That doesn't make any sense. Kale doesn't love us back. Broccoli is not a friend for humans. We can eat some plant foods if we desire it. But I think a lot of people will do better by realizing that we've been told to consume less of the things that are most beneficial for us, that would be meat and organs, and more of the things that are the most highly-defended parts of plants. We've been told to eat beans and greens. And that's the worst part of a plant. Everything that we've been told is completely wrong.

Katie: Yeah. I think it's a fascinating thing to think about. And like you said, it makes so much sense when you actually look at the data and it just goes against a lot of what the narrative that we're hearing right now. And I know there's also...most of the people listening are women and moms, and there are definitely also separate

considerations when it comes to women. So I've personally talked to quite a few men, especially who are doing incredible on a pure carnivore, all-meat diet, and are thriving. I haven't heard from very many women who have tried a full, like very strict carnivore protocol to really know how they're doing on it. But I would love to talk more about for someone who is listening to this and understanding the inflammation component and how this could be very beneficial, especially like we mentioned autoimmune disease, many people listening have different forms of autoimmune disease. What would be special considerations to know, especially as women? I know you and I talked about this very briefly before we started recording, but I think that's such an important piece to touch on for all the women who are listening.

Dr. Paul: So, I agree with you. I know some women who are doing pretty well on carnivore diets, but I also know women who feel a lot better on carnivore-ish diets. And that would be a diet that is based on meat and organs, but also incorporates the least toxic plant foods and does have some freedom to incorporate carbohydrates. So, the incredible thing about women is that they have this monthly vital sign in their period. And if women are doing something, whether it's stress or not sleeping enough or overexercising, or changing their diet to a ketogenic diet or a carnivore diet and their menstruation changes, that's kind of an indication there's something that is off. Similarly, I know a lot of women who have very painful periods every month and I often kind of challenge them when they're open to it, like, "What are you doing in your diet?"

I really believe that what we would call in Western medicine dysmenorrhea, pain with menstruation is not something that women should have to experience every month. And it's probably in some ways auto-immune, as well. It could be improved by "cleaning up the diet" or at least making some intentional choices. But I will re-emphasize the fact that I'm not really convinced that everyone needs to stop eating all plants. I think that if we make meat and organs the center of our diet and we include the least toxic plant foods, that allows people to have a lot more flexibility in their diet. Even things like avocado or berries are probably less toxic for most people than things like kale or broccoli or cauliflower or chard. Those are pretty bad foods, the latter set. So, women need to, I think, also have the freedom to incorporate carbohydrates if they desire it, or if they feel like it's necessary, especially pregnant and nursing moms, mothers or mothers to be, people who want to conceive.

It's important that women get enough calories. And oftentimes, carbohydrates are a reasonable source of those calories. Carbohydrates do not cause diabetes, remember. They're not bad if you are metabolically healthy. And we talked about how to do that. Predominantly, I think that it involves avoiding evolutionarily-inconsistent levels of seed oils. You should be able to incorporate carbohydrates in your diet without a problem. And so, I really do think it's important to communicate to women that there should be freedom around that. If you want to have avocado or berries or squash or a sweet potato every once in a while, listen to how your body does, but know that there are options.

Another thing that I really like to at least put out there for people is raw organic honey. You don't need to eat a ton of it, but a lot of people do pretty well with honey. Some people don't seem to do well with honey if they're salicylate-sensitive or whatever. But I think a lot of people feel pretty good with honey. And I incorporate it into my diet regularly and feel like it's a great source of carbohydrate. Now, again, people get kind of triggered when I talk about honey and think, "Isn't that pure sugar?" And I say, "Well, I don't think it's

bad for humans." Everywhere in the world that honey is available, it's eaten by indigenous cultures. The HODs eat it. At times, there are cultures in Africa who rely on honey for 20% to 50% of their calories. They don't get vascular disease or issues with that. And so, I think that we've overly-simplified our perspective on sugar and these things. I'm not advocating for high fructose corn syrup, but if you want to have a raw organic honey in your diet, and that helps you with carbohydrates and doesn't bother you, then that's another option as well.

So, it really comes back to thinking about the way that our ancestors have eaten and that may sound overly simplistic, or it may sound like I'm just cribbing paleo, or recapitulating paleolithic diets. But I believe that we are really recreating a spectrum of plant toxicity and where the paleo diet was amazing in starting to ask these questions about where our ancestors came from and how they ate. I think that a lot of the things we're discussing now are beginning to challenge the notion that leafy greens and seeds and nuts are as good for us as we believe they are. It's a little bit different. So, I'm sort of re-imagining a paleolithic type diet and it's come to be known as like carnivore-ish or fully carnivore.

Kate: Got it. And yeah, I love that you brought up actually the importance of consuming enough calories, especially for women. I see so many women who are actually just not eating enough. In fact, that was one of the keys for me, figuring out I dieted for years and years and years and had trouble losing weight. And I actually found I had to add more calories in as part of that process and more protein. And I'm really curious about the protein component, as well, because it seems like a lot of women are not consuming enough protein. And I know that there can be an upper limit to protein as well, but it seems like most women, that's not the concern that there's often, most women are not consuming enough protein, in general, which seems like it would resolve itself on a nose-to-tail carnivore-ish type approach. But from your experience, how much protein do women ideally need for optimal health?

Dr. Paul: Yeah, a great question. I do think that women avoid protein and I suspect that in some cases it's due to underlying GI issues. I know that some women I talk to have trouble digesting it. And oftentimes, that can be a vicious cycle. If we don't eat meat, we may not get the nutrients needed to digest meat. So, that can sometimes be helped by incorporating organs, which are more nutrient-rich, for a short amount of time, and then gradually increasing the meat. But my rule of thumb, which is, admittedly, just a rule of thumb, is that both men and women should consider about one gram of protein per pound of goal body weight per day. So, if I have a friend, she's 105 pounds, I would recommend around a hundred grams of protein for her a day. Now, you know, I think she's 5'1, and a hundred grams of protein is a pound of meat.

So, I don't know a lot of hundred-pound women who eat a pound of meat per day. Now, I'm 175 pounds, and I'll eat close to two pounds of meat per day. But I think that somewhere in that ballpark is reasonable for people, whether they're men or women, and it's based on goal body weight. So, if a woman is trying to lose weight, so say a woman is 150 pounds and wants to get down to 120, she doesn't need to eat a pound and a half of meat per day, but something at least a pound or 18 ounces of meat per day, I think it's going to be really helpful for her. And not to forget about the organs either to make sure that there is some attention to liver and other organs, heart, even spleen or pancreas or kidney. These are critical for humans.

They're often left out. We often talk about the carnivore diet as all meat, but I've said throughout this podcast, and we can get into it, nose to tail is key. And if we can't get the organs raw or we can't get the organs cooked, or we just won't eat spleen or pancreas or liver, like a lot of people won't, that's where things like desiccated organs come in, which are really helpful. So, there's lots of options to get these things in our diet in 2020. But I agree with you. I think a lot of women don't get enough protein and when they add more protein, a lot of things get better. There's great evidence that higher-protein diets actually improve bone density. And along with the protein, I think a lot of women also fear animal fat. They fear that fat is going to make them fat. And oftentimes, it's the reverse, especially when it's animal fat.

So, we can make a real distinction here between seed oils, which are polyunsaturated oils, and animal fat, which is essentially more than half-saturated. And the word saturated fat has almost become...it's become vilified incorrectly. That's healthy fat. I want to say saturated fat. How many will think that's the healthy fat these days, not say vegetable oil or polyunsaturated fat, and have people incorrectly think that's the healthy fat? But saturated fat is incredibly healthy for humans and on my podcast, which is "Fundamental Health," I've had a lot of discussions recently around a fatty acid called stearic acid, which is an 18- carbon saturated fat that in both humans and animal models appears to increase fat burning. That's obviously very broad strokes terminology but in humans, it "turns on mitochondria" and really allows them to burn more fat.

This is an 18-carbon fat that's essentially found only in animal foods. There was a study done in humans and they actually put people on a low stearic acid diet for two days, which was a vegan diet. If you want to be low in stearic acid, go on a vegan diet. There's no stearic acid in plant foods of any significant amount, other than perhaps cacao butter, but I'm much more of a fan of animal tallow or animal suet, which is where our Fire Starter supplement is from at Heart and Soil just to help people get some animal fats, some tallow with a stearic acid in their diet, and the results are striking. So, there's a lot of people... I think if women are listening to this and they want to lose weight, one of the key starting steps would be thinking about the amount of stearic acid in your diet and the amount of linoleic acid.

You want to maximize the former and minimize the latter, which means getting rid of seed oils and adding more animal fats, adding more suet, or adding more supplements like we make that have the suet in them, have a stearic acid in them. And it does some pretty incredible things in our physiology. It's kind of this evolutionary signal that you have abundance in animal foods. And so, I think that women are not getting enough protein, but they're also not getting enough animal fat. And, I mean, how many women out there are listening to this thinking, "Oh, I'm just eating my fat-free chicken breast with salad and putting some dressing on it." And there may be some protein in the chicken breast. I don't know that the salad greens are doing anything for women nutritionally other than perhaps making their bellies feel a little bit gassy and uncomfortable.

And then if they're using a dressing, most of the dressings are full of polyunsaturated oils, whether it's safflower oil, or canola oil, or sunflower oil. And so, you're actually going in the reverse direction with that type of a meal, and women would be better off just eating a steak with fat on it. And it seems so counterintuitive, but that's all just cultural conditioning. Your ancestors did not eat a salad with seed oil on it. That's not how you do it. If you give your body the nutrients it needs, you'll find satiety. And that's what we're

seeing more and more, which is why podcasts like this are so cool. And what I hope to achieve through my podcast is that this information is coming out at like a ground level, at a grassroots level. You're not going to get it from the nightly news for another 20 years because the mainstream media is so just misled.

And we've heard the notion that red meat and fat is so bad for us for so long that how could the mainstream media then change its mind so fast? We're never going to get it from there, but we need to realize that we've just been so led astray and that the foods we've been told that are bad for us are actually the foods that are the best for us, which makes sense when you think about it because we're in fact cratering in terms of how the outcomes. It would make sense that we've been told everything wrong if you look at how well we're doing as humans.

Katie: Yeah. That's so fascinating.

Today's podcast is brought to you by Beekeeper's Naturals, a company on a mission to reinvent your medicine cabinet with clean remedies that actually work. At Beekeeper's, they believe that you and your family deserve to feel your best all day, every day, which is why they create these clean science-backed natural remedies that support your daily health using bee products, which I have been a big fan of for a lot of my life as a beekeeper and now watching my oldest son be a beekeeper as well.

I wanna talk specifically about a couple of my favorite things from Beekeeper's. The first being their B.Soothed Cough Syrup. It's a remedy, one of those I hope none of us ever need but I'm always really glad to have on hand when we do. It's a super clean cough syrup that helps you bounce back quickly without any of the junk. So unlike the remedies that were available when I was a kid that tasted kind of chemically and a little bit like cherries and pine sol maybe had a baby, the B.Soothed Cough Syrup is delicious. It has a very mild berry flavor along with things like pure buckwheat honey, elderberry, Chaga mushroom, which is known as the king of mushroom, Bee Propolis, and olive leaf extract. Back to Bee Propolis in a minute because that's my other favorite product from them. But B.Soothed is delicious and really helpful this time of year. Like I said, I hope that you never have an occasion to need it but I always keep it on hand in case we do. It is free of drugs, and dyes, dirty chemicals, and refined sugar. So I always have it in our medicine cabinet for our first sign of needing it. But it's not the only Beekeeper's product that I love. I mentioned before, I am obsessed with their Propolis Spray and Kids Propolis Spray because they are also part of my first line of defense against any tickle or sniffle.

Propolis is so cool. It's a substance that the bees use to keep the hive safe and free of bacteria. And it just has so many incredible antibacterial properties naturally. It's a daily defender. I use it often for immune health and like I said, at the first sign of scratchy throat or even if my throat is just irritated from for instance voice lesson, if I sing a whole lot in a particular day, but it's a natural immune support. I love to use four sprays in the morning or anytime my throat's feeling tired or scratchy. Propolis is made out of plants and tree resins, and it's not honey. Bees use it, like I said, to defend their hive from germs. It's basically the hive's immune system, And now we get to benefit from it as well. Their Propolis Throat Spray is sustainably sourced and only has three simple ingredients. No refined sugars, dyes, or hard to pronounce chemicals. Those two are always around and I am a big fan of all of their products. If you're ready to upgrade your medicine cabinet, you can check all

of their products at their website. Their Cough Syrup and Propolis do sell out quickly. And I have a feeling that's gonna be even more the case this year. So check it out quickly. Go to [beekeepersnaturals.com/wellnessmama](https://www.beekeepersnaturals.com/wellnessmama) and you can save 15% on your first order there. Get ready to meet your new medicine cabinet with Beekeeper's Naturals.

This podcast is sponsored by Four Sigmatic. They are one of my favorite companies. I've been talking about them for years and they are well-known for their incredible and delicious mushroom drinks and products of all kinds. I have personally been starting my day with their coffee with Lion's Mane in some form for years. I really like their ground mushroom coffee with Lion's Mane because it works just like any other coffee, whether in a coffee maker or I use Chemex or a Ratio. And it has an added benefit. So, obviously coffee is one of the most consumed beverages in the world. Theirs is unique because it adds Lion's Mane. So you still get to keep the benefits of coffee but the addition of Lion's Mane really supports productivity and focus in a really unique way, and I find really helps cut the jitters. Lion's Mane is one of my favorite mushrooms, and I love that their coffee contains it. They have both the ground coffee and instant packets, which are great for on the go and then I always keep in my purse, especially when I'm traveling. Their coffee with Lion's Mane also includes a mushroom called Chaga. And you might have heard me talk about this on my interview with Tero, who's the founder of Four Sigmatic on this podcast. But Chaga is known as the King of Mushrooms. And it's one of my favorites because it is a really functional mushroom full of antioxidants and beneficial compounds that support the body in various ways, including by supporting the immune system. They have many other products as well, including single Elixir blends of mushrooms like Cordyceps, Chaga, Reishi, and Lion's Mane, as well as several other coffee products, including one with Lion's Mane, one with Cordyceps. I really loved all of their products that I've tried and my kids love their Reishi Cacao at night, and I love that it helps them sleep. A common question I get, does this coffee taste like mushrooms? Or people say, "I don't like mushrooms. Will I like this coffee?" And I can tell you their coffee, especially the Lion's Mane coffee tastes exactly like regular coffee, does not at all taste like mushrooms. You just get the benefits of the mushrooms without the taste. I have found that mushroom coffee is also very gentle on the gut. So it doesn't leave the jitters or that crash like some coffees do and the Lion's Mane seems to really enhance the natural effect of the caffeine. All Four Sigmatic products are organic, vegan, and gluten-free. And every batch is tested by a third-party lab to ensure that they don't contain any heavy metals, allergens, negative bacteria, yeast, mold, mycotoxins, pesticides, etc. So you're getting the highest quality product available. They are all backed by their 100% money-back guarantee. So you can try these with complete peace of mind. I love this company so much that I've worked at an exclusive offer just for "Wellness Mama Podcast" listeners. You can receive 10% off of your whole order on any Four Sigmatic products including their mushroom coffee or their Reishi, which is part of my nighttime routine. Check them all out at [foursigmatic.com/wellnessmama](https://www.foursigmatic.com/wellnessmama) and use the code `wellnessmama`, all one word, at checkout to save 10%.

And I know I love that you brought up stearic acid. And another thing that comes up, especially when people start consuming more protein, or this was a question I got quite a bit when I started consuming more protein, was what about the whole mTOR component of this? So, for anybody who's maybe not familiar with that term. Can you explain what mTOR is and then kind of your take on whether that's something we need to worry about when it comes to increasing protein consumption?

Dr. Paul: Yeah. You can think about mTOR as like an anabolic switch in the human body. And anabolic is like building muscle, building bone, building everything, really building protein, building hormones, building babies, growing, which doesn't all sound bad when I frame it like that. But again, within the mainstream media, mTOR is vilified incorrectly because there are some who mistakenly believe that over-activation of mTOR will lead to cancer. Now, again, this is conflation of disparate data points. Eating a lot of meat doesn't cause cancer. There is absolutely zero evidence for that. Zero, zero, zero. There is zero interventional evidence for that. That is all epidemiology, which is incredibly misleading. Epidemiology is observational studies, not interventional studies. And so, the whole narrative just gets wrapped up and it's really just criminal in my opinion. So the fear with mTOR, which is an acronym that stands for the mammalian target of rapamycin, is that eating meat will over trigger this anabolic switch, and eating meat will trigger mTOR, but you know what else triggers mTOR? Exercise, carbohydrates.

So, the only way to not trigger mTOR is to lay on your bed and drink oil all day long. And if you know someone that does that and they look good, then send them to me because I've never seen anyone who lays on their bed, doesn't exercise, and drinks fat all day who looks good or feels good or has any muscle. So clearly, the mTOR argument is massively oversimplified and horribly flawed. The problem here is that we are supposed to be triggering mTOR. You need it to grow a baby. You need it to have a baby. You need it to be fertile. And unfortunately, I'll just call Steven Gundry out. I think that he's responsible for much of the fear-mongering around mTOR. And, you know, he would have us eat very low protein, and I'll debate him on this any day.

You know, he would recommend very low amounts of protein, which I think don't make any sense. If you want to become sarcopenic, have osteoporosis, and infertile, lose your libido, and not able to do anything or pick up your kids or have any more kids then you might want to follow that tack. But otherwise, you want to eat like your ancestors and you look at rates of cancer in indigenous cultures. They're not high. They're very, very low and they eat a lot of meat. So, the fear of over-activating mTOR is, again, very myopic and is often missing the fact that carbohydrates trigger mTOR also. Most of the people who would tell us that you're over-triggering mTOR are eating carbohydrates because you can't avoid it, but they don't understand that insulin and leucine both trigger mTOR activation.

The flip side of mTOR is a protein called m-kinase or AMPK. And that's the one that gets activated at a high level when we're fasting or avoiding food. So, one of the things that's fascinating about a carnivore diet or a carnivore-ish diet is that you can have your "cake and eat it too" and you can eat anabolic nutrients in meat and organs and carbohydrates. And then have some time in the day where you fast, either between meals or doing intermittent fasting, or doing periods monthly where you have a 24-hour or 48-hour fast, and you will turn on m-kinase. It's all a balance. We can't be all m-kinase. We can't be all catabolic. People who are majorly catabolic have cancer. That's cancer Kikexia. It's unchecked catabolism. It's not a good thing for humans. You don't want to look like people who are chronically calorically deprived and eternally catabolic. If you want to be healthy and vibrant and voluptuous or fertile, or have hormones and have muscles and do things in your life, you need anabolic stimulus, and we can't avoid it nor should we fear it. But that's one of the most insidious things that I think gets misrepresented in the mainstream.

Katie: Yeah. You explained that so well. You're right. I think that's another really important thing is that carbohydrate component because the people like claiming that protein is dangerous from the mTor perspective or ignoring the fact, like you said, that carbohydrates also stimulate the same pathway. Another thing that comes up often in relation to a lot of these topics is fasting. And especially for women, that there seems to be a lot of varying opinions about if fasting is safe in any form. And if so, what type of fasting seems to be the best for women without putting any of those, like you said, monthly signaling factors at risk or potentially damaging fertility? I know you've talked about fasting before from a personal level, but what is your take on fasting from a general health perspective and then specific to women?

Dr. Paul: I think it's very individual. I think that most of us do benefit. I know that our ancestors fasted from time to time, not necessarily out of choice, although all major religions do incorporate some fasting rituals into their practice, which is fascinating. And so, humans throughout history have had periods of feasting and periods of fasting. I think it's valuable for us. Personally, I do some sort of fasting every day because I'll try and eat in a compressed window and then have a long period, 16 hours or 18 hours, or something where I'm not eating. That's what we might call intermittent fasting or daily time-restricted feeding. I think that longer fasting is beneficial, but it's like any powerful medicine. It can be overused. You can over-fast. And I think it's nice that women have that vital sign every month. If they're over fasting and they're losing their cycle, then there's a problem, or if they're over-fasting and feeling renowned or over-fasting and having libido changes or over-fasting and not sleeping well, then there's a problem there.

But I think that women can incorporate fasting, just being aware that listen to your body and see how it feels. I know that some people can feel pretty good with it too. It's not easy. We're not used to it. And certainly, if women are listening to this and they've never been in ketosis or never had periods where they didn't eat, the beginning part can be a little rough, but I do think it's beneficial for most of us to become "fat-adapted" by avoiding carbohydrates for some amount of time or avoiding food for some amount of time. And I think it's good. You can think of it as high-level cellular housecleaning.

Katie: Yeah. That's a great way to look at it. And that was part of my own kind of transformational journey the last couple of years was realizing at the end of the day, the goal for me is to become metabolically adapted and able to handle whatever inputs I put in versus getting so adapted to only keto or only carbs or only any specific ratio that my body is then not as adaptable or able to handle any other scenario because like you've explained multiple times throughout this interview for our hunter-gatherer ancestors or for pretty much any other time in history, humans would have consumed the food that was available. But they would've probably prioritized animal products because those were higher in calories and the nutrients that they needed. And so, that's been kind of my own journey that I've realized is like to get less dogmatic about the particular foods or sticking to very specific macros or ratios and to prioritize metabolic flexibility in the least toxic way possible.

Dr. Paul: I agree with that completely getting those organs in, whether they're desiccated organ supplements or not, getting good quality meat from grass-fed grass-finished regenerative farms, less toxic plant foods, that's the recipe for success. It doesn't have to be dogmatic. It doesn't have to look the same for everyone. But I think that paleo diets are often not enough for most people and we need to be a little bit more intentional. And if people are not thriving in whatever they're doing, I just hope to offer some ideas and tools that might

not have been considered in the past because there is so much dogmatism that limits that in the mainstream and even within the health sphere.

Katie: Absolutely. And I'll put links, I know you've mentioned some resources from your website. I'll link to your website and also to your book and to the other resources you've mentioned in the show notes at wellnessmama.fm. And to kind of just recap and put everything into a very practical kind of actionable mindset at the end of this interview, I'd love if you could just give us some high-level touch points specifically for women and specifically speaking to women who maybe are recognizing that they have some kind of chronic inflammation or chronic disease. I know that you work with people personally on this. And I'll put those resources in as well, but can you kind of just give us, like if you had to sort of name the bullet points of an ideal type of diet for someone in that type of situation, where would you have them start?

Dr. Paul: Yeah. So, my practice is closed now. I can't accept anybody new, but that's one of the reasons I do what I do with the podcast, "Fundamental Health" and with Heart and Soil and the other kind of resources I want to offer to people. But I think it's three main points that I would ask people to remember. The first is that animal meat and organs are the central food for humans throughout our evolution. They made us human by providing many nutrients. They should not be feared. They're incorrectly vilified in the mainstream based on badly done science. And again, there's tons more for all these rabbit holes to go down in the book or on my podcast, and that we should incorporate animal meat and organs into any healthy human diet, both for adults, for children, for elderly folks, both men and women. And if you can't get organs in your diet, consider something like desiccated organs. We make those at Heart & Soil. The website is heartandsoil.co. People can always email me there. Dr. Paul, drpaul@heartandsoil.co, if they have questions about which product might be right for them.

The second point is that plants do exist on a toxicity spectrum. They do have toxins. They're defending themselves. They're stuck in the ground and that we would do well to consider this if we really want to thrive, and to not necessarily be so dogmatic about eliminating all plants. If you want to, you certainly can. I really personally have not eaten many plants at all in the last two-plus years at all. I do incorporate honey, but the majority of my diet is meat and organs and honey. And it works really well for me. And so, find what works for you within those guidelines, but understand that the mainstream narrative around fiber and plant compounds is really limited. It's pretty wrong. And you don't need those if they're not serving you. And think about the way your ancestors would have done it.

And then thirdly, perhaps this should be the first point, but it's important not to forget regardless, that things that we do in 2020 should not be the norm. Vegetable oils, seed oils never been used by humans in the past, and they absolutely should be avoided as should high-fructose corn syrup. And most people understand high-fructose corn syrup, but many more are misled regarding seed oils. So, I think that if you religiously, for lack of a better word, eliminates seed oils while prioritizing animal meat and organs and understanding that plant foods eaten along a spectrum of toxicity, avoiding the most toxic plant foods will be ideal for humans, I think most people listening to this will see vast improvements in their health, which is ultimately what we all want so that we can all just live better and share joyful things in this like brief life that we get on the Earth.

Katie: I love that. And yeah, to echo what you said, I think at the end of the day, it's realizing that each of us is our own first and foremost primary health care provider. So, it's figuring out doing the research and doing the due diligence and experimentation with your own health and figuring out what those factors are kind of within those guidelines that are going to work best for you. And I think, like you mentioned, there are some great general guidelines and then there's so much individuality within those that we're all responsible for figuring out. And I love that that's so much a part of your message. And another question I love to ask at the end of interviews, somewhat selfishly, is if there's a book or a number of books besides your own that have had a dramatic impact on your life and if so, what they are and why?

Dr. Paul: Yeah. I mean, a lot of them, gosh, a lot of books. I like philosophy. I like that kind of stuff. There's a book by Bruce Lee called "Striking Thoughts." I often come back to many of Bruce Lee's maxims. It sounds cliché in 2020 to say that, but he was a wise dude, you know. He definitely left the Earth too soon. So, it's a fantastic book. "Striking Thoughts" by Bruce Lee has a lot of really powerful thoughts in it. I also really enjoy creative fiction from time to time. I don't know. That's probably going to be different for every person, but I like the "Red Rising" series from Pierce Brown. It's kind of a fun set of sci-fi books. And then, you know, I think for me, it's mostly that kind of stuff, just trying to understand how to reframe the way that I'm thinking about the world. "Seven Habits of Highly Effective People" is pretty darn good. I like some of Tim Ferriss' stuff, especially "The Tools of Titans," hearing what other people have done that's worked for them in business and life has been pretty powerful for me.

Katie: I love it. I will add all of those to the show notes as well. And Paul, thank you so much for being here today. You've been on my list to interview for a really long time, and I'm so excited that we finally got to chat.

Dr. Paul: My pleasure.

Katie: And thank you as always for listening, for sharing your most valuable resource, your time with both of us today. We're so grateful that you did, and I hope that you will join me again on the next episode of "The Wellness Mama" podcast.

If you're enjoying these interviews, would you please take two minutes to leave a rating or review on iTunes for me? Doing this helps more people to find the podcast, which means even more moms and families could benefit from the information. I really appreciate your time, and thanks as always for listening.